

- Worksheet p. 7-13:

2. Normal distribution



3. Use calculator

4. Men scatterplot:

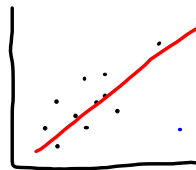
Direction: Positive

Form: Linear

Strength: moderate/strong

No obvious outliers

example



Female scatterplot

Direction: Positive

Form: Linear

Strength: moderate/strong

1 outlier (74.87, 169.76)

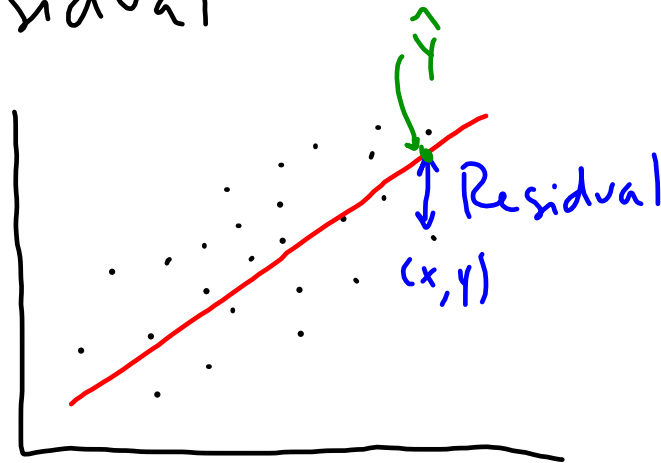
- Linear Model: Equation of a straight line through the data.

– Summarize the data with two parameters:

$$y = mx + b$$

↑ ↑
slope y-intercept

- Residual



\hat{y} = predicted y-value
(parameter)

y = actual y-value

$$\text{Residual} = y - \hat{y}$$

- "Best Fit" \rightarrow least squares
 - square each residual
 - add them up
 - find line that has lowest number \rightarrow called "least squares"

- Back to linear model:

$$\hat{y} = a + bx$$

↑ ↑
y-intercept slope

- Find on calculator:

STAT CALC

8: LinReg(a+bx)

"Linear Regression"

x-list (typ. L1), y-list (typ. L2)

for older calculators

- Make sure correlations are shown:

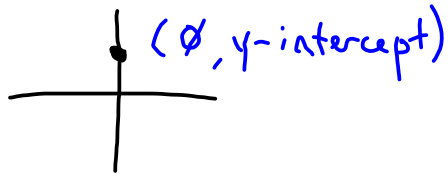
2nd ZERO (to get CATALOG)

Diagnostic ON

Enter

• What does this mean?

$a \rightarrow$ where line from linear model
crosses y -axis



$b \rightarrow$ relationship between x - and
 y -variables

#5 on worksheet:

Men: $a = -364$

$$b = 7.29$$

$$r^2 = 0.566$$

$$r = 0.752 \leftarrow \text{correlation coefficient}$$

Women: $a = -116$

$$b = 3.66$$

$$r^2 = 0.545$$

$$r = 0.738$$